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TITLE: PRODUCTION OF GOETHITE BY TWO-STAGE AGING

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ABSTRACT:

PURPOSE: The hydrolysis of a ferric salt with alkali is effected in 2-steps, as aging is effected, to give goethite of desired particle sizes with high needle shape, narrow particle size distribution and high dispersibility.

CONSTITUTION: A ferric salt other than ferric sulfate such as **ferric nitrate** nonahydrate is combined with an alkali such as **sodium hydroxide** at a molar ratio OH/Fe of 0.5∼2.9 to form a slurry of partially hydrolyzate of the ferric salt. Then, the first-step aging is effected in the presence or absence of a zinc salt such as zinc chloride in amount of 1∼10mol% based on the

ferric salt for hours selected from 1 to 72 hours to give goethite particles of
0.10∼0.20 micrometer long axis and 6∼12 average axis ratio. The alkali
is further added so that the OH/Fe molar ratio becomes more than 3.5 and, when
the first step is conducted in the absence of a zinc salt, the above-stated
amount of a zinc salt is added, to effect the second aging at 50∼200°C
and a pH of 13.0 (at 20°C).